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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Guido Luigi Daghini

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,633	Applicant(s) DAGHINI ET AL.	
	Examiner Justin R. Fischer	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 31-37, 39-48, 50, 51, 53-57, 59-62, and 64-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pneumatiques (GB 1,091,507) and further in view of Miyazaki (US 2001/0037487).

Pneumatiques teaches a pneumatic tire construction including a pair of annular reinforcing elements 10, a carcass structure 13, a pair of bead fillers 11, at least one flipper 12, a tread band, a belt structure (reference character 2 in Figure 1), and a pair of sidewalls, wherein each of said carcass plies 13₁-13₃ are turned up around respective annular reinforcing elements. As to the flipper, Pneumatiques teaches the use of parallel metallic reinforcing elements, such as cords, cables, or wires (Page 2, Lines 35-45). While Pneumatiques fails to expressly suggest a cord having at least one preformed element, such a metallic cord is recognized as providing improved rubber penetration without a corresponding increase in diameter, as shown for example by Miyazaki (Abstract and Paragraph 1). It is particularly noted that Miyazaki suggests the use of such a metallic cord in a plurality of tire components, including bead reinforcing layers- one of ordinary skill in the art at the time of the invention would have recognized the language "bead reinforcing layer" as including flippers (well known bead reinforcing

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layer). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the metallic cord of Miyazaki in the flipper of Pneumatiques. Lastly, the preformed filaments of Miyazaki have a diameter between 0.17 mm and 0.25 mm, which falls entirely within the range of the claimed invention (Paragraph 42).

Also, with respect to the independent claims, the language "substantially envelops" does not define over the tire construction of Pneumatiques. First, absent any specific definition, the tire of Figure 2 is seen to include a flipper that substantially envelops the bead core and bead filler. Second, the reference generally describes the inclusion of a filler that extends radially outward of the radially outer edges (axially inner and outer) of said flipper (Page 2, Lines 80+)- such a disclosure suggests a wide variety of embodiments, including those in which the outer end of the filler is slightly radially outward of the outer ends of the flipper and such embodiments are seen to define a flipper that "substantially envelops" the bead core and the bead filler.

Regarding claims 32-35 and 43-46, the cord of Miyazaki include waved filaments and unwaved filaments, wherein the term "waved filaments" includes sinusoidal arrangements (Paragraph 48).

As to claims 36, 37, 47, 48, 57, and 62, Miyazaki suggests a wave pitch (wavelength) between 5 and 30 times the filament diameter and a wave height (amplitude) between 0.5 and 4 times the filament diameter (Paragraph 60). Given the diameter ranges noted above, Miyazaki teaches a wide range of cord constructions that satisfy the broad ranges of the claimed invention. It is further noted that the claims

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define absolute dimensions and it is well recognized that cord constructions vary as a function of the size of the tire (and the intended use)- one of ordinary skill in the art at the time of the invention would have found it obvious to select an amplitude and wavelength in accordance to the claimed invention absent a conclusive showing of unexpected results.

With respect to claims 39 and 40, flipper 12 comprises a pair of legs that are in direct with bead filler 11 and a central portion that directly contact the annular reinforcing elements 10. It is further evident from Figure 2 that flipper ends 12₁ and 12₂ are offset from one another.

Regarding claim 41, as noted above, the tire of Pneumatiques includes a pair of chafer 16 formed of metallic reinforcing elements (Page 2, Lines 62+). Given the disclosure of Miyazaki, one of ordinary skill in the art at the time of the invention would have been equally motivated to form chafer strips 16 from cords comprising at least one preformed filament. In particular, chafer strips are well recognized as being "bead reinforcing layers".

With respect to claims 50 and 53, Pneumatiques suggests the use of more than one flipper (Page 2, Lines 15-20). In such an instance, one of the flippers can be viewed as the claimed "flipper" and the additional flipper can be viewed as the claimed "chafer". The claims as currently drafted do not exclude the second flipper of Pneumatiques from being viewed as a chafer (claim only require a layer formed of metallic reinforcing elements).

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As to claim 51, chafer strips 16 are positioned axially external of carcass plies 13₁-13₃.

With respect to claims 54 and 59, the filaments of Miyazaki are formed of steel.

Regarding claims 55 and 60, Miyazaki teaches the use of a metallic coat to improve adhesion (Paragraph 98) and each of the claimed metal coatings represent the well known and conventional coatings used in the tire industry.

As to claims 56, 57, 61, and 62, Miyazaki suggests the inclusion of at least 2 waved filaments (Paragraph 43).

With respect to claims 64 and 65, flipper 12 and chafer 16 are formed of metallic reinforcing elements inclined between 20 and 45 degrees with respect to the equatorial plane of the tire, which falls entirely within the broad ranges of the claimed invention.

Regarding claim 66, Pneumatiques suggests that the disclosed tire construction "is especially suitable" for large tires, such as truck tires. A fair reading of the reference as a whole, however, suggests the general manufacture of pneumatic tires having the disclosed construction. One of ordinary skill in the art at the time of the invention would have found it obvious to form a wide variety of tire constructions, including high or very high performance tires, with the disclosed construction. It is emphasized that the disclosure of truck tires is essentially a preferred embodiment and it is well taken that a reference is applicable for all that it would have reasonably taught to one of ordinary skill in the art at the time of the invention (including non preferred embodiments).

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3. Claims 31-35, 38-46, 49-51, 53, 54, 58, 59, and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pneumatiques and further in view of Ikehara (US 5,584,169) and Miyazaki.

Pneumatiques teaches a pneumatic tire construction including a pair of annular reinforcing elements 10, a carcass structure 13, a pair of bead fillers 11, at least one flipper 12, a tread band, a belt structure (reference character 2 in Figure 1), and a pair of sidewalls, wherein each of said carcass plies 13₁-13₃ are turned up around respective annular reinforcing elements. As to the flipper, Pneumatiques teaches the use of parallel metallic reinforcing elements, such as cords, cables, or wires (Page 2, Lines 35-45). While Pneumatiques fails to expressly suggest a cord having at least one preformed element, such a metallic cord is recognized as providing improved corrosion resistance, as shown for example by Ikehara (Column 1, Lines 5-15). It is further noted that a fair reading of Ikehara suggests the general use of such a cord in tire components (disclosure of belt plies is only exemplary) and thus, one of ordinary skill in the art at the time of the invention would have found it obvious to use the metallic cord of Ikehara in the flipper of Pneumatiques. Miyazaki is applied to further evidence the known use of similar cords having preformed filaments in belt plies and/or bead reinforcing layers (abstract). Lastly, the claimed filament diameter is consistent with the conventional range of values used in the tire industry, as shown for example by Miyazaki (Paragraph 42).

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Regarding claims 32-35, 38, 43-46, and 49, the cord of Ikehara includes a preformed filament in the form of a sine curve or a helical configuration (Column 4, Lines 45-67 and Column 6, Lines 5-13).

With respect to claims 39 and 40, flipper 12 comprises a pair of legs that are in direct with bead filler 11 and a central portion that directly contact the annular reinforcing elements 10. It is further evident from Figure 2 that flipper ends 12₁ and 12₂ are offset from one another.

Regarding claim 41, as noted above, the tire of Pneumatiques includes a pair of chafer 16 formed of metallic reinforcing elements (Page 2, Lines 62+). Given the disclosure of Ikehara and Miyazaki, one of ordinary skill in the art at the time of the invention would have been equally motivated to form chafer strips 16 from cords comprising at least one preformed filament. In particular, chafer strips are well recognized as being "bead reinforcing layers".

With respect to claims 50 and 53, Pneumatiques suggests the use of more than one flipper (Page 2, Lines 15-20). In such an instance, one of the flippers can be viewed as the claimed "flipper" and the additional flipper can be viewed as the claimed "chafer". The claims as currently drafted do not exclude the second flipper of Pneumatiques from being viewed as a chafer (claim only require a layer formed of metallic reinforcing elements).

As to claim 51, chafer strips 16 are positioned axially external of carcass plies 13₁-13₃.

With respect to claims 54 and 59, the filaments of Ikehara are formed of steel.

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With respect to claims 64 and 65, flipper 12 and chafer 16 are formed of metallic reinforcing elements inclined between 20 and 45 degrees with respect to the equatorial plane of the tire, which falls entirely within the broad ranges of the claimed invention.

4. Claims 31, 41, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Io (JP 06024216) and further in view of Miyazaki. Io is directed to a pneumatic tire construction comprising a chafer 3 and a flipper that is spaced from a carcass structure by said chafer (reference uses same reference character for each bead reinforcing layer). The reference further teaches that each bead reinforcing layer is formed of metallic reinforcing elements (Paragraph 6). While Io fails to expressly suggest a cord having at least one preformed element, such a metallic cord is recognized as providing improved rubber penetration without a corresponding increase in diameter, as shown for example by Miyazaki (Abstract and Paragraph 1). It is particularly noted that Miyazaki suggests the use of such a metallic cord in a plurality of tire components, including bead reinforcing layers- one of ordinary skill in the art at the time of the invention would have recognized the language "bead reinforcing layer" as including flippers (well known bead reinforcing layer). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the metallic cord of Miyazaki in the bead reinforcing layers of Io (chafer and flipper). Lastly, the preformed filaments of Miyazaki have a diameter between 0.17 mm and 0.25 mm, which falls entirely within the range of the claimed invention (Paragraph 42).

Also, with respect to the independent claim, the language "substantially envelops" does not define over the tire construction of **10**. Absent any specific definition, the tire of Figure 1 is seen to include a flipper that substantially envelops the bead core and bead filler. It is further noted that claim 31 does not require that the flipper directly contact the bead filler and/or bead core.

Regarding claim 52, chafer 3 is disposed axially internal with respect to the carcass structure.

Response to Arguments

5. Applicant's arguments filed July 15, 2008 have been fully considered but they are not persuasive- said arguments have been addressed in the pending rejections above.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin Fischer
/Justin R Fischer/
Primary Examiner, Art Unit 1791
August 28, 2008

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